Green Buildings Priority Stream
Entry Pathway #2
National Building Code – 2023 Alberta Edition (NBC 2023 (AE))

This pathway is available to development permit applicants proposing buildings that demonstrate significantly better energy and emissions performance than the NBC 2023 (AE) reference building.

Energy and Emissions Performance Requirements

To be eligible, a building must meet all the following energy and emissions performance requirements:

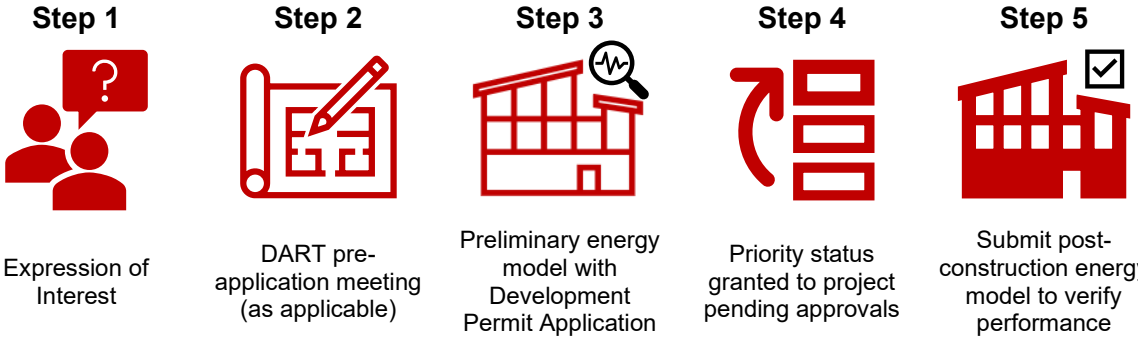
- For buildings with a total building volume of **300 m^3 or greater**:
  - achieve **energy performance Tier 4 or higher**, demonstrated by consuming at least **40 per cent less energy** (GJ/year) and having at least **20 per cent less heat loss** (GJ/year) than the Reference Building;

- For buildings with a total building volume of **less than 300 m^3:**
  - achieve **energy performance Tier 4 or higher**, demonstrated by consuming at least **30 per cent less energy** (GJ/year) and having at least **15 per cent less heat loss** (GJ/year) than the Reference Building; and

- emit at least **70 per cent fewer greenhouse gas emissions** (tCO_2e/year) than the Reference Building, through a combination of reduced energy use and on-site renewable energy generation.

If a building cannot achieve a 70 per cent emissions reduction due to unique site, building, or design constraints, it may still be considered under this pathway if it meets a net zero ready standard[1].

How to participate



Detailed participation steps are on the next page.

[1] A net zero ready building is designed and built to a high level of energy performance and could achieve net zero emissions in the future with the addition of renewable energy systems, such as solar panels.

Green Buildings Priority Stream participation steps

Step 1 Contact the Program Coordinator to express interest in having a project prioritized through the Green Buildings Priority Stream.

- **Email:** greenbuildings@calgary.ca
- **Phone:** 403.826.0454

Step 2 Consider requesting a Development Applications Review Team (DART) pre-application meeting by calling the Planning Customer Service Line at 403-268-5311.

DART Pre-applications are strongly recommended on all major, complex, or controversial outline plan, subdivision, land use amendment and development permit applications. Having a DART pre-application can help identify major issues with the proposal, as well as identify supplemental technical information that will be required to accompany the formal application.

A Development Applications Review Team (DART) Pre-application is submitted online through vista.calgary.ca. Click on the following for the Complete application requirement list and how-to guide.

Step 3 Include the following documentation with your development permit application:

1. A preliminary energy model prepared by a Professional Engineer, Registered Energy Advisor, or qualified individual that:

    a. Demonstrates compliance with the Performance (Section 9.36.5) or Tiered Performance (Section 9.36.7) compliance paths of the applicable National Building Code – Alberta Edition using either a whole-building energy model or the summation of individual unit energy models prepared in accordance with Section 9.36, including:

        i. energy modelling results for both the proposed building and the reference building, with annual energy consumption segmented by energy source (at minimum, electricity and natural gas).

        ii. baseload energy, calculated using either EnerGuide Rating System baseloads or using these prescribed baseload values:

            - 25.62 GJ/yr per unit for a single-family home or an attached but not stacked unit (e.g. rowhome or duplex).
            - 15.35 GJ/yr per multi-unit residential building (MURB) unit, as defined by the EnerGuide Rating System.

iii. For Tiered Performance submissions, a tier compliance summary that states the achieved tier and reports the code-required tier outcome metrics (including overall energy performance improvement and envelope improvement, where applicable), with supporting model output excerpts; and

b. Separately quantifies the impact of proposed onsite solar PV generation on annual grid-tied electricity consumption, for the purposes of Green Buildings Priority Stream energy and greenhouse gas (GHG) performance eligibility requirements.

Below is a sample table that presents the required metrics by compliance path:

Performance (9.36.5)	Reference Building	Proposed Building
Energy Consumption		
Annual natural gas consumption (GJ/yr)	100	0
Annual electricity consumption (GJ/yr)	100	100
Total annual energy consumption (GJ/yr)	200	100
Energy consumption - lower than reference (%)	-	50
On-site Energy Generation		
Annual electricity generation (GJ/yr)	-	100
Net electricity consumption (GJ/yr)	-	0
Net energy consumption - lower than reference (%)	-	100

Tiered Performance (9.36.7)	Reference Building	Proposed Building
Heat Loss		
Heat loss – lower than reference (%)	-	20
Energy Consumption		
Annual natural gas consumption (GJ/yr)	100	0
Annual electricity consumption (GJ/yr)	100	100
Total annual energy consumption (GJ/yr)	200	100
Energy consumption - lower than reference (%)	-	50
Performance Tier	-	4
On-site Energy Generation		
Annual electricity generation (GJ/yr)	-	100
Net electricity consumption (GJ/yr)	-	0
Net energy consumption - lower than reference (%)	-	100

Note: *For projects complying with Section 9.36, baseload energy is not included or explicitly defined and is therefore calculated separately for GBPS informational and benchmarking purposes only.*

Energy modelling submitted at the Development Permit stage is used solely to determine eligibility for this pathway and is not intended for, nor accepted as, energy code compliance documentation for building permit submission.

Step 4 The Program Coordinator will respond to your development permit application submission documentation to either:

1. Issue a formal invitation to the Green Buildings Priority Stream;
2. Request additional information; or
3. Advise that the project does not meet the eligibility requirements.

From this point forward, the application proceeds through the City's standard development and building permit review processes. The benefit of priority status is that the City coordinates reviews internally to resolve issues earlier and more efficiently, reducing overall review timelines. Where needed, the Program Coordinator may work directly with the applicant to clarify or resolve outstanding items.

Step 5

1. Submit a post-construction energy model to confirm that the as-built project's energy and emissions performance is consistent with the preliminary energy model submitted with the Green Buildings Priority Stream application.

2. The post-construction energy model must be prepared to meet the same requirements as the preliminary energy model described in Step 3.

3. The post-construction energy model is required regardless of the building code compliance pathway used for the Building Permit.